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Hi-Speed USB 2.0 4-Port TetraHub™

Connect multiple-speed USB devices at maximum bandwidth

User Manual

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INTRODUCTION

Congratulations and thank you for purchasing the Belkin Hi-Speed USB 2.0 4-Port TetraHub (the Hub). The Hub provides four downstream USB ports that offer backward-compatible, Plug-and-Play connectivity with all USB devices, including USB 1.1 (or low- and full-speed) devices, as well as with USB 2.0 (or high-speed) devices. This includes such peripherals as scanners, printers, mass-storage devices, and high-resolution cameras. The Hub is self-powered, which allows the cascading of devices with additional hubs, so that up to 127 USB devices may be connected to a single port.

The Hub features multicolor LEDs that indicate the operating speed of each connected USB device and the speed of the link to the host computer. For additional information, refer to the "Technical Specifications" section.

The TetraHub offers several important advantages over traditional USB 2.0 hubs. Most important is its implementation of the new "Quad TT" architecture. Simply stated, when connected to a USB 2.0 host controller, each of the TetraHub's four downstream ports deliver a full 12Mbps of USB bandwidth for low- and full-speed devices while still providing total support for high-speed devices. This is especially important when connecting multiple, bandwidth-intensive, full-speed devices such as USB webcams, speakers, scanners, and external storage devices.

INTRODUCTION

In contrast, a traditional four-port USB 2.0 hub provides only 12Mbps of bandwidth for use by low- and full-speed devices, and this bandwidth is shared by each of the four ports. The TetraHub delivers up to 48Mbps of bandwidth, 12Mbps for each port!*

In addition to the "Quad TT" feature, the TetraHub also monitors the speed of each connected device and provides users with a visual indication of its connected speed. Refer to the "Determining the Speed of Connected Devices" section of this User Manual for additional information.

*In cases in which the TetraHub is connected to a USB 1.1 host controller, the maximum USB 1.1 bandwidth of 12 Mbps is shared across all four ports.

OVERVIEW

Features

- Speed-sensing LED indicator for each individual port
- Advanced Quad TT architecture for low- and full-speed devices
- Four 480Mbps downstream ports
- Operates without power supply with most USB devices
- Multiple hubs may be stacked one upon the other
- Compliant with Universal Serial Bus specification 2.0 (data rate 1.5/12/480Mbps)
- Backward-compatible with Universal Serial Bus specification 1.1 (data rate 1.5/12Mbps)
- Compatible with Windows® 98 SE, Me, 2000, and XP
- Approved by USB Implementers Forum (USB-IF)
- Supports Plug-and-Play specifications
- Supports "hot swapping" of USB devices
- Over-current detection and protection
- Fully compatible with USB 1.1 and USB 2.0 devices

Package Contents

- High-Speed USB 2.0 4-Port TetraHub
- AC Power Adapter
- User Manual

OVERVIEW

Technical Specifications

Upstream Ports	(1)
Downstream Ports	(4)
Per-Port Voltage	DC +5V
Per-Port Current	500mA (max) (self-powered mode)
Power Mode	Self-powered/bus-powered
Operating Temperature	5° C ~ 40° C
Storage Temperature	-20° C ~ 60° C
Enclosure	ABS plastic
Power Supply	
Output:	DC 6V 2.1A
Plug Size:	5mm (outer) 2mm (center)
Plug Polarity:	Center Positive

Upstream Port LED Color Definitions:

Red	Full-speed (12Mbps)
Amber	High-speed (480Mbps)

Downstream Port LED Color Definitions:

Green	Low-speed (1.5Mbps)
Red	Full-speed (12Mbps)
Amber	High-speed (480Mbps)

INSTALLATION

Important Note: *Please do not connect any USB devices to the Hub until instructed to do so in step 4 of this installation procedure.*

1. Plug the AC adapter into a wall outlet or surge suppressor. Plug the DC connector into the DC power jack found on the rear of the Hub.

Note: *The Hub may be used without the power supply with most USB devices*

2. Plug the flat end (USB-A connector) of the provided USB device cable into the downstream port of your computer or downstream port of another hub. Plug the square end (USB-B connector) into the USB-B connector on the back of the Hub.

Important Note: *The Hub must be connected to a USB 2.0-compliant host in order to function in high-speed mode (480Mbps data rate). If the Hub is connected to a USB 1.1-compliant host, it will operate only in low-speed or full-speed mode (1.5Mbps/12Mbps).*

3. Windows will now detect your Hub and install the required driver support. (The Windows "Install New Hardware Wizard" may prompt you to provide your Windows Installation CD to complete the driver installation process).

INSTALLATION

Important Note: *High-speed hub drivers are included with most USB 2.0 PCI upgrade cards, and are preinstalled along with the PCI card drivers. If you purchased an upgrade card prior to the release of high-speed hub support, please check with your PCI card vendor for an updated USB 2.0 driver. The Belkin USB 2.0 driver supports all competitive cards based on the NEC host controller with the exception of Adaptec. The most recent Belkin driver is available at www.belkin.com.*

CONNECTING USB DEVICES TO THE HUB

1. Plug the USB-A connector of the USB device(s) you wish to connect into any of the Hub's available downstream ports.
2. Follow the installation instructions provided by the manufacturer of the device.

Important Note: *When moving a device from one port on the Hub to another, it may be necessary to reinstall the USB drivers for that device.*

DETERMINING THE SPEED OF CONNECTED DEVICES

1. The USB 2.0 specification includes three separate modes of data transmission. These are defined as low-speed (1.5Mbps), full-speed (12Mbps), and high-speed (480Mbps). The Belkin TetraHub is the only USB hub on the market today that provides a visual indication of a connected device's speed. This is accomplished using proprietary speed indication circuitry. Each downstream port on the Hub has a corresponding LED that changes color according to the speed of the connected device as noted below.

Connection Speed	**LED color**
Low	Green
Full	Red
High	Amber

2. In addition, the upstream port has a corresponding LED that indicates the speed of the computer's USB host controller as noted below.

Host Controller Speed	**LED color**
Full	Red
High	Amber

Note: *The Hub itself will always connect to the host as either a full- or high-speed device, never as a low-speed device.*

FCC Statement

DECLARATION OF CONFORMITY WITH FCC RULES FOR ELECTROMAGNETIC COMPATIBILITY

We, Belkin Corporation, of 501 West Walnut Street, Compton, CA 90220, declare under our sole responsibility that the product:

F5U231

to which this declaration relates:

Complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CE Declaration of Conformity

We, Belkin Corporation, declare under our sole responsibility that the F5U231, to which this declaration relates, is in conformity with Generic Emissions Standard EN 55022:1998 Class B, EN50081-1 and with Generic Immunity Standard EN50082-1 1992.

Belkin Corporation Limited Lifetime Product Warranty

Belkin Corporation warrants this product against defects in materials and workmanship for its lifetime. If a defect is discovered, Belkin will, at its option, repair or replace the product at no charge provided it is returned during the warranty period, with transportation charges prepaid, to the authorized Belkin dealer from whom you purchased the product. Proof of purchase may be required.

This warranty does not apply if the product has been damaged by accident, abuse, misuse, or misapplication; if the product has been modified without the written permission of Belkin; or if any Belkin serial number has been removed or defaced.

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